Attorney Docket: STL920000089US1/1914P

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Jinny Nguyen

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL NO:

In Re Application of:

Jennie CHING and Eric HSIAO

Serial No.: 09/784,865

Filed: February 15, 2001

Date: May 25, 2005

Confirmation No.: 4574

Group Art Unit: 2162

Examiner: Fleurantin, Jean B.

For: METHOD AND SYSTEM FOR FILE SYTEM SYNCHRONIZATION BETWEEN A CENTRAL SITE AND PLURALITY OF REMOTE SITES

APPEAL BRIEF

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TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

Patent application serial no. 09/784,865 was assigned to INTERNATIONAL BUSINESS MACHINES CORPORATION and recorded with the United States Patent and Trademark office on February 15, 2001, on reel 011597, frame 0974.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-15 are pending in the application and stand rejected. Claims 1-15 are on appeal.

IV. STATUS OF AMENDMENTS

No amendment was filed after final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

"A block diagram of a DMD (digital media distributor) in accordance with the present invention is illustrated in Figure 1." P. 4, l. 23 - P. 5, l. 1. "As shown, the DMD includes three major components: a central site 10, a distribution network 12, and a remote site 14." P. 5, ll. 1-2. "In accordance with the present invention, the central site 10 efficiently distributes objects and thus manages the resources of the remote site 14." P. 6, ll. 19-20. "By managing these resources, the central site 10 can determine when to send information to the remote site(s) 14." P. 6, ll. 20-21.

"A remote site 14 may not receive files, for example, during power outages or bad weather." P. 10, ll. 6-7. "The central site 10, however, automatically keeps a master inventory of files as specified in a monitored file system for which there is a parallel file system at every remote site 14." P. 10, ll. 7-9. "Each of the remote sites 14 are configured to report back to the central site 10 at a pre-defined time, based on a callback scheduling algorithm." P. 10, ll. 9-10. "These report back periods are used to provide, among other data, information about the files that a remote site 14 will need." P. 10, ll. 10-11. "In so doing, the remote sites 14 save the most reliable information therewithin." P. 10, ll. 11-12.

"All remote sites 14 can be synchronized according to a central site's file system (or web server)." P. 10, ll. 13-14. "A loadlist, which consists of file name, file path, file size, and timestamp of the file, is generated by the central site server and sent over to the remote sites 14." P. 10, ll. 14-15. "Each of the remote site servers 16 uses the latest loadlist to compare with the previously executed loadlist and then determines the files needed to be downloaded from the central site 10." P. 10, ll. 15-17. "The files can be deleted from the remote site 14." P. 10, ll. 17-18.

"Filename, file path, file size, and the timestamp of the two loadlists are compared to determine new or updated files which need to be downloaded, and which files can be removed from the remote site's 14 local directory." P. 10, ll. 18-20. "The new or updated file list, which is called "missing file list", is then sent from the remote site 14 back to the central site 10." P. 10, ll. 20-21.

"The central site 10 uses the "missing file list" from remote sites 14 and transmits the files to the remote site 14." P. 10, l. 23 - P. 11, l. 1. "The remote site 14 receives the "missing files" and uses the information in the loadlist (the file path field) to move the files to the proper directory." P. 11, ll. 1-2.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant respectfully seeks review of the following rejection:

Claims 1-15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,758,150 to Bell et al. (Bell) in view of U.S. Patent No. 6,256,673 to Gayman (Gayman).

VII. ARGUMENTS

A. Summary of the Applied Rejections

In the Final Office Action, the Examiner rejected claims 1-15 under 35 U.S.C. 103(a) as being unpatentable over Bell in view of Gayman. In so doing, the Examiner stated:

> As per claims 1 and 10, Bell discloses "a method of synchronizing files between a central site and a plurality of remote sites" as a database synchronization system indicated generally at, a plurality of remote database system is connected via communications line to a central database stored on a central (see col. 3, lines 15-19) comprising the steps of: (b) "reporting which of the files are missing by each of the plurality of remote sites to the central site" as a database on a remote computer is corrupted during a database transaction the remote computer can access the audit trail files to roll the database back to a stable point free of corruption (see col. 3, lines 51-63); further, in column 7, lines 2-5, Bell discloses if communication line fails during the transfer of flat files, in which flat files are saved on the remote computers and are resent by the remote computers; and
> (c) "determining within the central site which of the files needs to be sent to each of the plurality of remote sites" as a method for synchronizing the content of a central database stored on a central computer with the content of a remote database stored on a remote computer, processing the contents of the first database of change into a format suitable for transfer to the central database stored on the central computer; restarting the processing of the audit trail files to create a second database of change stored on the remote computer; and transferring the processed contents of the first database of change to the central database stored on the central computer (col. 7, lines 47-65). Bell does not explicitly disclose steps of providing a list of files to the plurality of remote sites by the central site, prior to a callback time of the remote sites. However, Gayman discloses provides a cyclic multicasting of an image file from a central data provider (server) to one or more client machines (workstations) over a computer network (see Gayman col. 11 , line 60 to col. 12, line 4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bell and Gayman with steps of providing a list of files to the plurality of remote sites by the central site, prior to a callback time of the remote sites. Such modification would allow the teachings of Bell and Gayman to improve the accuracy and the reliability of the method and system for the file synchronization between a central site and plurality of remotes, to provide a distributing system updates over a computer network (see Gayman col. 1, lines 33-34).
>
> As per claim 7, in addition to claim I , Bell further discloses "a central site, the central site

including a file system synchronization (FSS) helper application and an automated central site operations (ACSO) mechanism for transmitting the list of files" as a database synchronization system capable of efficiently synchronizing a central database with one or more databases during periods of heavy transaction activity on remote databases and on the central database (see col. 1, lines 7-10); further, in column 4 lines 25-28, Bell discloses to maintain the synchronization of the central database in central computer, database of change of each of remote computers must be transmitted periodically to central computer; a "at least one the remote site" (see fig. 1, col. 3, lines 16-19), "the at least one remote site including a file system synchronization system capable of efficiently synchronizing a central database with one or more remote databases during of heavy transaction activity on the remote databases and on the central database (see col. 2, lines 7-10).

In an Advisory Action mailed on April 18, 2005, the Examiner also stated:

Gayman discloses the claimed provides a cyclic multicasting of an image file from a central data provider (see Gayman col. 11. lines 50 to col. 12, line 4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bell and Gayman with steps of providing a list of files to the plurality of remote sites by the central site, prior to a callback time of the remote sites. Such modification would allow the combined teachings of Bell and Gayman to improve the accuracy and the reliability of the method and system for the file synchronization between a central site and plurality of remotes, and to provide a distributing system updates over a computer network (see Gayman col. 1, lines 33-34).

B. The Cited Prior Art

Bell

Bell is directed to a database synchronization system and method that substantially eliminates or reduces the disadvantage and problems associated with previous database synchronization systems. The database synchronization system is capable of efficiently synchronizing a central database with one or more remote databases during periods of heavy transaction activity on the remote databases and on the central database. Col. 2, ll. 1-10.

Gayman

Gayman is directed to a system for providing a cyclic multicasting of an image file from a central data provider to one or more client machines over a computer network through the use of

different , consecutive cycles during a cyclic multicast session with each cycle including transmission of at least a portion of the image file. Col. 2, ll. 17-22.

C. Claims 1-15 Are Allowable Over Bell in view of Gayman.

Applicant respectfully submits that Bell fails to teach or suggest "(b) reporting which of the files are missing by each of the plurality of remote sites to the central site; and, (c) determining within the central site which of the files needs to be sent to each of the plurality of remote sites," as recited in claims 1 and 10. Bell is cited for teaching the reporting of which of the files are missing by each of the plurality of remote sites to the central site and determining within the central site which of the files needs to be sent to each of the plurality of remote sites. The Examiner admits that Bell does not explicitly disclose step (a), "providing a list of files to the plurality of remote sites by a central site prior to a callback time of the remote site." However, the Examiner asserts that Gayman discloses providing a cyclic multicasting of an image file from a central data provider (server) to one or more client machines (workstations) over a computer network and that it would have been obvious to modify the combined teachings of Bell and Gayman with steps of providing a list of files to the plurality of remote sites by the central site prior to a callback time of the remote site. Applicant respectfully disagrees.

The Examiner contends that Bell's use of the audit trail for rollback of the database to a stable point following corruption of the database is readable on the recited reporting of which of the files are missing by each of the plurality of remote sites to the central site. Applicant fails to see how the use of the audit trail formed within the remote computer for database rollback by the remote computer in Bell teaches or suggests any form of reporting by a remote site to a central site. The act of rollback occurs solely within the remote computer based upon the audit trail

contained solely within the remote computer. Applicant respectfully submits that such teaching fails to read on or suggest the recited reporting of which of the files are missing by each of the plurality of remote sites to the central site prior to a callback time of the remote sites.

Additionally, without teaching the reporting of missing files by a remote site to a central site, Applicant respectfully submits that there can be nothing to teach or suggest a determination in the central site of which files are needed in the remote site. While the Examiner points to the transfer of data from the database of change in the remote computer to the central computer as reading on the determination of missing files and the creation of a group of files a remote site will need, there is nothing to teach or suggest that the database of change indicates needed data in the remote computer. Rather, as indicated by its name, the database of change indicates changes to the database that occur in the remote computer: "Database of change 28 is a record of all the updates, additions, or deletions made to the databases on the storage devices 15 during the time period covered by the audit trail files 24 processed by the migrator application 26." (col. 4, lines 21-24) The provision of the database of change from the remote computer to the central computer merely allows the central computer to be synchronized with changes. "To maintain the synchronization of the central database in central computer 16, database of change 28 of each of the remote computers 18 must be transmitted periodically to central computer 16." (col. 4, lines 24-27) Applicant fails to see that there is any form of missing data in the remote computer, since the remote computer performs the tracking of any changes to its databases and subsequently reports such changes to the central computer. Thus, Applicant respectfully submits that there is nothing in Bell to teach or suggest a determination in a central site of which files are needed in a remote site.

In response to Applicant's position that Bell fails to teach or suggest "determining within the central site which of the files needs to be sent to each of the plurality of remote sites," the Examiner asserts "Bell discloses the task of creating flat files from the database of change can be distributed across these available resources (see col. 2, lines 38-48)." Applicant fails to see how this section of Bell is relevant to "determining within the central site which of the files needs to be sent to each of the plurality of remote sites." In fact, the task of creating flat files, as referenced by the Examiner, is specifically taught as being "distributed across the CPUs and storage devices of the **remote computers**" (col. 2, lines 38-40, emphasis added). Applicant respectfully submits this cited act that occurs within the remote computer in Bell wholly fails to teach or suggest Applicant's recited step of determining within a central site. Further, Applicant respectfully reiterates that since the remote computer performs the tracking of any changes to its databases and subsequently reports such changes to the central computer, there isn't any form of missing data in the remote computer, and thus there is nothing in Bell to teach or suggest a determination in a central site of which files are needed in a remote site.

In addition to these deficiencies of Bell, the Examiner admits that Bell does not disclose providing a list of files to the plurality of remote sites by a central site prior to a callback time of the remote site, as recited in claim 1. While the Examiner considers Gayman's use of cyclic multicasting of an image file from a central data provider to one or more client machines as being combinable with Bell to teach providing a list of files to the plurality of remote sites by the central site prior to a callback time of the remote sites, Applicant respectfully disagrees.

The cited art of Gayman defines the image file being multicast as "an exemplary data file which consists of a single file containing the contents of an entire disk or an entire hard drive, or one or more partitions of the disk or hard drive." (col. 3, lines 15-19) Applicant fails to see how

a single file containing the entire contents of a disk or hard drive teaches or suggests a list of files. Further, the provision of the entire contents of a hard drive precludes the possibility that there would be missing files to be reported and/or a determination of the files that need to be sent. Thus, Applicant respectfully submits that the cyclic multicasting of an image file in Gayman does not combine with Bell in a manner that results in any teaching or suggestion of the recited step of providing a list of files to the plurality of remote sites by the central site prior to a callback time of the remote sites.

Further, the Examiner's response to these arguments merely reiterates the rejection assertion that it would have been obvious to modify the teachings of Bell and Gayman and that such modification "would allow the teachings of Bell and Gayman to provide a cyclic multicasting of an image file from a central data provider (server) to one or more client machines (workstations) over a computer network with minimum network transmission while allowing any number of client machines (workstations) to download the image file at any time without the need to synchronize with the beginning of the file transmission of the central data provider (server)." Applicant still respectfully fails to see how this teaches or suggests providing a list of files to the plurality of remote sites by the central site prior to a callback time of the remote sites. In addition, Bell is cited for teaching that flat files from the database of change are sent from a remote system to a central system, and Gayman is cited for teaching cyclic multicasting from a central data provider to one or more client machines. Applicant respectfully submits that there is nothing to teach or suggest how these activities, which address data provision in wholly opposite direction considerations, could or would be combined to achieve the provision/transmission of data from a central site to a remote site prior to callback of the remote site, as recited by the Applicant.

In view of the foregoing, Applicant respectfully submits that Bell, even when taken with Gayman, fails to teach, show, or suggest the present invention as recited in independent claims 1 and 10. Further, claims 2-6 and 11-15 depend directly or indirectly on independent claims 1 and 10, respectively. Therefore, Applicant respectfully submits that these claims, by including the features of an independent claim while adding further features, are not taught, shown, or suggested by the cited art for at least those reasons stated hereinabove.

Further, with regard to independent claim 7, the Examiner cites Bell for disclosing the recited central site including a file system synchronization (FSS) helper application and an automated central site operations (ACSO) mechanism for transmitting the list of files. Applicant fails to see how Bell teaches or suggests the recited central site that includes a mechanism for transmitting the list of files, as the Examiner has admitted that that Bell does not disclose providing a list of files by a central site prior to a callback time of the remote sites. For this and the foregoing reasons regarding Bell's and/or Gayman's inadequacies, Applicant respectfully submits that claim 7 is not taught, shown, or suggested by the cited art. Applicant further respectfully submits that claims 8-9, which depend directly or indirectly on claim 7, are allowable for at least the same reasons as claim 7.

F. Summary of Arguments

For the reasons set forth above, Appellant respectfully submits that the claims 1-15 are allowable over the cited references. Appellant respectfully requests that the final rejection of claims 1-15 be reversed.

Note: For convenience of detachment without disturbing the integrity of the remainder of pages of this Appeal Brief, Appellants' APPENDIX A is attached on separate sheets following the signatory portion of this Appeal Brief.

Authorization for payment of the required Brief fee is contained in the cover letter for this Brief. Please charge any fee that may be necessary for the continued pendency of this application to Deposit Account No. 09-0460 (IBM Corporation).

Respectfully submitted,

SAWYER LAW GROUP LLP

May 25, 2005
Date

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APPENDIX A

CLAIMS

1. (original) A method of synchronizing files between a central site and a plurality of remote sites comprising the steps of:

(a) providing a list of files to the plurality of remote sites by the central site, prior to a callback time of the remote sites;

(b) reporting which of the files are missing by each of the plurality of remote sites to the central site; and

(c) determining within the central site which of the files needs to be sent to each of the plurality of remote sites.

2. (original) The method of claim 1 in which the providing step (a) utilizes a file system synchronization (FSS) helper application.

3. (original) The method of claim 1 in which the reporting step (b) utilizes a file system synchronization remote site operation mechanism.

4. (original) The method of claim 1 in which the determining step (c) utilizes an automated central site operation mechanism.

5. (original) The method of claim 1 wherein the list of files comprises a loadlist.

6. (original) The method of claim 5 wherein each of the files in the loadlist are date and time stamped.

7. (previously presented) A system for sychronizing files comprising:

a central site, the central site including a file system synchronization (FSS) helper application and an automated central site operations (ACSO) mechanism for transmitting a list of files; and

at least one remote site, the at least one remote site including a file system synchronization remote operating mechanism (FSS RSO), wherein the FSS RSO mechanism creates a group of files it will need based upon the transmitted list of files.

8. (original) The system of claim 7 wherein the list of files comprises a loadlist.

9. (original) The system of claim 8 wherein each of the files in the loadlist are date stamped.

10. (original) The computer readable medium containing program instructions for synchronizing files between a central site and a plurality of remote sites, the program instructions for:

(a) providing a list of files to the plurality of remote sites by the central site, prior to a callback time of the remote sites;

(b) reporting which of the files are missing by each of the plurality of remote sites to the central site; and

(c) determining within the central site which of the files needs to be sent to each of the plurality of remote sites.

11. (original) The computer readable medium of claim 10 in which the providing step (a) utilizes a file system synchronization (FSS) helper application.

12. (original) The computer readable medium of claim 10 in which the reporting step (b) utilizes a file system synchronization remote site operation mechanism.

13. (original) The computer readable medium of claim 10 in which the determining step (c) utilizes an automated central site operation mechanism.

14. (original) The computer readable medium of claim 14 wherein the list of files comprises a loadlist.

15. (original) The computer readable medium of claim 10 wherein each of the files in the loadlist are date and time stamped.

APPENDIX B

EVIDENCE

(NONE)

APPENDIX C

RELATED PROCEEDINGS

(NONE)